教室里的火山，是我们四个喂大的

科学课前三天，我们小组四个人就开始忙那座火山了。火山是糊出来的：先拿一个空矿泉水瓶当火山口，瓶身上糊报纸，一层一层，糊出山坡的形状。李多多负责撕报纸，我负责调浆糊，王响把报纸按在瓶子上抹平，坐在最后一排的赵一诺手最巧，山坡的纹路都是她压出来的。

糊好的火山晾在教室后墙，第二天干了，灰扑扑的，像一座真的小山。李多多拿红颜料在山坡上刷了几道，说这是岩浆流过的痕迹。王响说那得先让它流出来才算。我们四个对视一眼，都等着科学课那天。

科学课终于来了。老师把小组的材料一样一样摆上桌：白醋、小苏打、洗洁精、红色食用色素，还有一把小勺。我们组的火山摆在桌子正中间，全班四十多双眼睛围着它。老师朝我们点头，意思是开始吧。

我往火山口里倒白醋，咕咚咕咚，醋味冲上来，前排几个女生捏住了鼻子。李多多逗她们：憋住，好戏在后头。王响把小苏打倒进纸槽，赵一诺往醋里滴了两滴色素、挤了一滴洗洁精，搅了一下。然后王响把小苏打顺着纸槽倒进火山口。

一秒，两秒，火山口里先是鼓起一个泡，接着咕嘟咕嘟响起来，红色的泡沫涌上来，漫过火山口，顺着报纸糊的山坡往下流。全班哗地一声惊呼，后排有人喊：喷了喷了！有人从座位上站起来，凳子刮得地板响。老师拍了一下桌子说安静，可他自己也在笑。我们四个手忙脚乱，我扶火山，李多多递纸巾，王响举着手机拍，赵一诺喊流到桌子边了快接住。

泡沫流了火山半山坡，慢慢停了。全班还围着不肯散，隔壁班的人都扒着门框看。老师问我们：知道为什么冒泡吗？李多多抢着说：醋跟小苏打打架了！全班大笑。老师也笑：差不多，它们反应生成二氧化碳，泡泡就是气体跑出来。李多多得意地环视一圈，像真的打赢了一架。

下课铃响了，我们四个舍不得拆火山，把它抬到后墙放好。那座灰扑扑的报纸山，山坡上还留着干掉的红色印子。后来每次路过，李多多都要拍它一下说：喂，你什么时候再喷一次。它当然不回答。可我们四个都记得那个上午，记得醋的味道、红色的泡、全班整齐的惊呼。科学原来不是书上的字，是冒出来的泡，是大家一起喊出来的那一声。

The Volcano in Our Classroom, Fed by the Four of Us

Three days before science class, the four of us in the group had already been busy with the volcano. We built it by pasting: an empty plastic bottle as the crater, layers of newspaper pasted over the bottle into the shape of a slope. Li Duoduo tore the paper, I mixed the paste, Wang Xiang pressed the paper onto the bottle and smoothed it, and Zhao Yinuo, who sat in the last row, had the cleverest hands. Every ridge on the slope was pressed out by her.

The finished volcano dried against the back wall overnight, gray and dusty, like

a real little mountain. Li Duoduo brushed a few red streaks down its slope and said these were traces of lava. Wang Xiang said it would only count once the lava actually flowed. The four of us looked at each other, all waiting for science class.

Science class finally came. The teacher laid out the group materials one by one: white vinegar, baking soda, dish soap, red food coloring, and a small spoon. Our volcano sat in the middle of the table, more than forty pairs of eyes circling it. The teacher nodded at us. Begin.

I poured white vinegar into the crater, glug glug glug, the sour smell rushed up, and a few girls in the front row pinched their noses. Li Duoduo teased them: hold your breath, the good part comes after. Wang Xiang poured baking soda into a paper trough. Zhao Yinuo dropped two drops of coloring and one drop of soap into the vinegar and stirred. Then Wang Xiang tipped the baking soda down the trough into the crater.

One second, two. A bubble swelled in the crater, then it began to gurgle, red foam rising over the rim, running down the newspaper slope. The whole class burst into a gasp. Someone in the back shouted: it's erupting! Chairs scraped the floor as kids stood up. The teacher slapped the desk for quiet, but he himself was grinning. The four of us scrambled: I steadied the volcano, Li Duoduo handed tissues, Wang Xiang held up his phone to film, and Zhao Yinuo shouted that the foam had reached the edge of the table, catch it.

The foam ran halfway down the slope and slowly stopped. The class still would not scatter; kids from the next class pressed against the doorframe to watch. The teacher asked us: do you know why it bubbled? Li Duoduo blurted: the vinegar and the baking soda had a fight! The class roared with laughter. The teacher laughed too: close enough. They react to make carbon dioxide, and the bubbles are the gas escaping. Li Duoduo looked around smugly, as if he had truly won a fight.

The bell rang, and we could not bear to take the volcano apart, so we carried it back to the wall. The gray paper mountain still had dried red streaks on its slope. Ever since, whenever Li Duoduo passes it, he gives it a pat: hey, when will you erupt again? Of course it does not answer. But all four of us remember that morning, the smell of vinegar, the red bubbles, the whole class gasping at once. Science, it turns out, is not words in a book. It is bubbles rising, and that one shout everyone lets out together.

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全班惊呼的那一秒，我在扶我的火山

分组做火山实验的时候，组长分活：陈晨捏模型，刘子洋倒醋，孙嘉嘉加小苏打。分到我，她说：周小舟，你扶着火山，别让它倒。我说好。我话本来就少，组里说什么都说好。

模型是用橡皮泥裹纸杯做的，陈晨捏得很快，山坡、沟壑，连山脚的石头都捏出来了。等待晾干的那节课，我们组三个人围着模型商量谁倒醋谁加粉，商量得很热闹。没有人问我。我在旁边把抹布叠了又叠，把桌角的水渍擦了三遍。

科学课那天，火山架在托盘里。刘子洋捏着量杯沿杯壁倒白醋，倒得很慢，很稳，像在做一件了不起的事。醋味散开，前排有人咳嗽。孙嘉嘉用小勺舀小苏打，一勺，两勺，第三勺倒进去的时候手抖了一下，粉末洒在山坡上一小片。

然后，火山口开始冒泡。先是小小的，像烧开的米汤，然后泡泡连成串，橙红色的泡沫漫出杯口，顺着山坡淌下来。全班炸开了，惊呼，鼓掌，有人喊我们组的火山最猛。陈晨举手跟老师报告：我们加了洗洁精！刘子洋举着空量杯到处给人看。孙嘉嘉跳起来，马尾一甩一甩。

而我，在扶我的火山。泡沫涌上来的时候火山晃了一下，我双手扣住杯身，稳稳按在托盘上，一直按到泡沫平息。没有人喊周小舟真棒，也没有镜头对着我。可我按着那座滚烫的、湿漉漉的火山，听着全班整齐的惊呼从头顶罩下来，心里有什么东西跟着那些泡泡一起涌上来了。

收器材的时候，组长陈晨忽然说：幸好小舟一直扶着，不然火山早倒了，泡沫都喷到桌上了。组里三个人一起回头看我。刘子洋说：对，多亏你。我说不客气，耳朵还是热了。原来我做的不是扶火山，我做的，是让火山可以安心喷发。

后来科学老师讲二氧化碳，我在下面听，想起那天的泡泡。我不爱说话，可我那双手扣得住一座摇晃的火山。教室里的欢乐像一场喷发，人人都在喊，而我知道，喷发的那一刻，总得有人稳稳地扶着。下一次实验，我还是会坐在组里，等那只分给我的活。

The Second the Class Gasped, I Was Holding Up My Volcano

When our class split into groups for the volcano experiment, the group leader handed out jobs: Chen Chen shaped the model, Liu Ziyang poured the vinegar, Sun Jiajia added the baking soda. My turn came, and she said: Zhou Xiaozhou, you hold the volcano steady so it does not tip. I said okay. I am a quiet person. In a group, I say okay to everything.

The model was a paper cup wrapped in clay. Chen Chen worked fast: the slope, the gullies, even the stones at the foot. During the waiting period while it dried, three of our group chatted busily about who would pour the vinegar and who would add the powder. Nobody asked me. Beside them, I folded the rag over and over and wiped the water stain on the table corner three times.

On the day of science class, the volcano stood in its tray. Liu Ziyang pinched the measuring cup and poured white vinegar down the inner wall, slow and steady, like a man doing something great. The sour smell spread; someone in the front row coughed. Sun Jiajia scooped baking soda with a small spoon: one scoop, two. On the third her hand trembled, and a little powder scattered across the slope.

Then the crater began to bubble. First small, like boiling rice soup, then the bubbles came in strings, orange-red foam spilling over the rim and running down the slope. The class exploded: gasps, applause, someone shouting that our volcano was the fiercest. Chen Chen raised her hand to report to the teacher: we added dish soap! Liu Ziyang waved his empty cup at everyone. Sun Jiajia jumped, her ponytail swinging.

And I was holding up my volcano. When the foam surged, the volcano rocked, and I clamped both hands around the cup, pressing it firm against the tray, holding until the foam settled. Nobody shouted that Zhou Xiaozhou did great; no camera pointed at me. But I held that warm, wet volcano, listening to the whole class gasp above me, and something inside my chest rose along with those bubbles.

While packing up, Chen Chen suddenly said: luckily Xiaozhou held it the whole time, or the volcano would have tipped and sprayed the whole table. The three in our group turned to look at me. Liu Ziyang said: right, thanks to you. I said you are welcome, my ears still hot. So what I did was not just holding a volcano. What I did was let the volcano erupt with peace of mind.

Later, when the science teacher explained carbon dioxide, I listened from my seat and thought of those bubbles. I do not talk much, but these two hands of mine can hold a rocking volcano steady. The joy in a classroom is like an eruption: everyone shouts, and I know that in the moment of eruption, someone must always be holding on firmly. Next experiment, I will still sit in the group and wait for the job that comes to me.

备课本上那一页：今天让火山喷一次

备课本翻到火山那一页，我用铅笔在边上写了一行小字：这次不演示，让他们自己做。当科学老师第六年，往年的火山都是我在讲台上喷给他们看，泡泡冒起来，他们哇一声，然后翻开课本。我觉得那一声哇太便宜了，来得容易，忘得也快。

实验前一周，我把全班分成八个小组，每组发一卷报纸、一瓶浆糊、一个空瓶。任务单上写着：先造一座火山，下节课让它喷发。课代表担心地问：老师，会弄脏教室吗？我说：会，非常脏。他眼睛亮了。

那一周，教室后墙排着八座歪歪扭扭的火山。有的山坡糊得太厚，像发面馒头；有的火山口剪得太大，像碗。没有一座好看，全是他们自己的手做的。我在走廊上看它们，像看一排等着开饭的孩子。

实验课那天，我在讲台边只发材料：白醋、小苏打、洗洁精、色素、量杯、托盘。我不说步骤，步骤在任务单上。第一组倒白醋的是个平时上课从不举手男孩，他捏着量杯沿瓶壁倒，倒完抬头看我，我朝他点头，他咧嘴笑了。第二组的女孩们往醋里滴色素，一滴不够，又加一滴，商量得像在配香水。

第三组的火山先喷了。小苏打落进醋里，咕嘟一声，红色泡沫涌出火山口，顺着报纸山坡淌下来。全班从座位上探起身子，整齐的惊呼压过来，接着是各组的惊呼此起彼伏。有个女孩拍着桌子喊我们组怎么还不喷，三秒后她自己那组也喷了，她喊得比谁都响。我站在讲台边，手里的粉笔从头到尾没动过。

喷发过后，教室一片狼藉：桌上是泡沫，地上是报纸屑，两座火山泡塌了。孩子们抢着擦桌子，抢着抢救自己的火山，八组的成员围着一座塌了的报纸山讨论明天怎么补。有个小组跑来找我说：老师，我们查了，是醋不够，明天能再试吗？我说能，材料柜随时开。

下课前我问他们：火山为什么喷。八个小组七种答案，有说气的，有说酸的，有说醋和小苏打吵架的。我不给标准答案，只把二氧化碳的名字写在黑板上。那节课没有一个人抄笔记，可我知道他们记住了。科学最好的样子，就是那一声压不住的惊呼，和塌了以后还想再试一次的追问。

晚上备课，我在火山那一页的铅笔字下面又添了一行：明年还这么上。窗外有风，材料柜里剩的半瓶白醋在灯下发亮。当老师第六年，我第一次觉得，那一声哇不便宜了，它是孩子们自己挣来的。

The Page in My Lesson Plan: Today We Make a Volcano Erupt

My lesson plan lay open on the volcano page, and I wrote a small line in pencil beside it: this time no demonstration, they do it themselves. In my sixth year teaching science, in past years I had always made the volcano erupt on the podium for them to watch. The bubbles rose, the students went wow, and then they opened the textbook. I felt that wow came too cheap, came easy, and was forgotten just as fast.

A week before the experiment, I split the class into eight groups and gave each a roll of newspaper, a bottle of paste, and an empty bottle. The task sheet read: first build a volcano; next class, make it erupt. The class representative asked worriedly: teacher, will it make the classroom dirty? I said: yes, very dirty. His eyes lit up.

That week, eight crooked volcanoes lined the back wall of the classroom. Some slopes were pasted so thick they looked like steamed buns; some craters were cut too

wide, like bowls. Not one was beautiful, and every one was made by their own hands. I looked at them from the corridor, like looking at a row of children waiting for a meal.

On experiment day, standing at the side of the podium, I only handed out materials: white vinegar, baking soda, dish soap, food coloring, measuring cups, trays. I gave no steps; the steps were on the task sheet. In the first group, the one who poured the vinegar was a boy who never raised his hand in class. He held the cup and poured along the inner wall, then looked up at me. I nodded, and he grinned. In the second group, the girls dropped coloring into the vinegar, one drop not enough, another drop added, consulting like perfumers.

The third group's volcano erupted first. The baking soda fell into the vinegar with a gurgle, red foam surged out of the crater, and ran down the newspaper slope. The whole class rose from their seats, a unified gasp rolling over, then each group's shouts rising one after another. A girl banged the table demanding why her group had not erupted yet; three seconds later theirs did, and she shouted louder than anyone. I stood by the podium and never once moved the chalk in my hand.

After the eruptions, the classroom was a wreck: foam on the desks, paper scraps on the floor, two volcanoes soaked flat. The children fought over wiping the tables, fought to rescue their volcanoes, and group eight crowded around a collapsed paper mountain debating how to repair it tomorrow. One group ran up and asked: teacher, we looked it up, it was not enough vinegar, can we try again tomorrow? I said yes, the supply cabinet is always open.

Before the bell I asked them: why does a volcano erupt? Eight groups gave seven answers: gas, acid, the vinegar and the baking soda fighting. I gave no standard answer and only wrote the word carbon dioxide on the blackboard. Not one person took notes that class, yet I know they remembered. The best face of science is that gasp you cannot hold back, and the question asked after collapse: can we try once more.

That evening while preparing lessons, I added another line under the pencil note on the volcano page: do it this way again next year. Outside the window the wind blew; the half bottle of leftover white vinegar in the supply cabinet gleamed under the lamp. In my sixth year teaching, I felt for the first time that the wow was no longer cheap. The children had earned it themselves.